DOCUMENT RESUME

ED 121 892 UD 015 945

AUTHOR Williams, Trevor
TITLE Teacher Prophesies and the Inheritance of Inequality.
PUB DATE Aug 75
NOTE 32p.; Paper presented at the Annual Meeting of American Sociological Association (San Francisco, California, August 1975)

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage
DESCRIPTORS *Academic Achievement; Economic Factors; Elementary Secondary Education; Equal Education; Expectation; Group Structure; High School Students; Lower Class Students; Power Structure; Predictive Validity; *School Role; Social Factors; *Social Structure; *Socioeconomic Influences; Student Characteristics; *Teacher Attitudes; Teacher Influence
IDENTIFIERS *Self Fulfillment Prophecies; Teacher Expectations

ABSTRACT

Educational attainments are seen as the link between the status attainments of one generation and those of the next. Most of the apparent opportunity inequalities are thought to reside in those processes leading to the social origins - educational attainment relationships -- that is, in families, in schools, or in both. The present investigation develops a causal model to represent these social processes and to consider how teacher prophesies may explain this relationship and how they can contribute to the inheritance of inequality. The model is designed to elaborate traditional notions about the nature of teacher expectations themselves, to examine the effects on these expectations on two measures of student achievement, and to examine the extent to which student social origins affect the development of teacher expectations, and, through these, student achievement. Results offer no support to revisionist arguments that see teacher prophesies as transmitting the effects of students' social origins to their academic achievements. Teachers appear to engage in another kind of discrimination - that is, although their prophesies for both the cognitive and normative performances of students appear to have minor effects at best on what students actually learn, these same prophesies are fulfilled when teachers evaluate this learning. The social class achievement relationship persists because of social class differences in "merit". (Author/AM)

**********
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
**********

ED121892

# TEACHER PROPHESIES AND THE INHERITANCE OF INEQUALITY

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

Annual Meetings, American Sociological Association
San Francisco, August 1975

UD 015945

Trevor Williams
National Institute of Education
Washington, D.C.

The opinions expressed in the publication do not necessarily reflect the position, policy, or endorsement of the National Institute of Education.

TEACHER PROPHESIES AND THE INHERITANCE OF INEQUALITY

The apparent demonstration of self-fulfilling prophesies at work within classrooms--by Rosenthal and Jacobson in 1968, and by a number of others since then--has been widely accepted as evidence of the importance of this phenomenon for student achievement within schools (Brophy and Good, 1974, p. 32). A good part of this acceptance derives from the fact that self-fulfilling prophesies seem to provide a ready explanation for subpopulation group differences in achievement-related behaviors; that is, an explanation for the observed socioeconomic, racial, and ethnic group differences in IQ, school achievement, motivation, ambition, self-concept, and the like. Rist's (1973, p. 19) statement is illustrative of this argument: "Schools assume that middle-class children can learn, and they do. Likewise, schools assume that lower-class students cannot learn, and they don't."

Given the form of the linkages between educational, occupational, social, and economic attainments (see Sewell and Hauser, 1975, for example), this kind of argument is often advanced to explain (in part) how attainments in one generation are passed on to the next, that is, how social and economic inequality is inherited. The social processes in question constitute a major theme for those who argue that

schools maintain the class structure (Katz, 1971; Carnoy, 1974, for example).

The present investigation addresses the explanation of the social origins/school achievement relationship in these terms by focusing on teacher prophesies as intervening variables transmitting the effects of students' social origins to their academic achievements. A causal model is developed to represent these social processes, and is estimated with data on some 10,500 high school students. The model is designed to:

a. elaborate traditional notions about the nature of teacher expectations themselves;
b. examine the effects of these expectations on two common, but somewhat different, measures of student achievement (standardized measures and teacher evaluations); and
c. examine the extent to which student social origins affect the development of teacher expectations and, via these, student achievement.

## BACKGROUND

### Inheritance of Inequality: Social Class and Education.

The inheritance of social status is a social fact. Occupational status correlations between fathers and sons

lie in the region of .3 to .4 (Blau and Duncan, 1967, p. 169; Alexander and Eckland, 1973, p. 111). This observation, coupled with the belief that perfect mobility[1] is both desirable and possible, is taken as evidence of inequalities of opportunity between social classes.

Traditionally, educational attainments are seen as the critical link between the status attainments of one generation and those of the next (Blau and Duncan, 1967). And, most of the apparent opportunity inequalities are thought to reside in those processes leading to the social origins-educational attainment relationship; that is, in families, in schools, or in both. The OCG I data suggest that the correlation between these two variables is in excess of .4 (Duncan, Featherman, and Duncan, 1972, p. 38). As a result, a great deal of effort has been expended in attempts to understand the nature of this relationship. Work by Sewell and others is the most extensive and systematic in this regard (see, for example, Sewell and Hauser, 1975). The present investigation considers how teacher prophesies may explain this same relationship and, thus, can contribute to the inheritance of inequality.

Explanations: Meritocratic and Revisionist Theses

Most explanations of the observed relationship between

social class and educational achievement fall into one of two categories:

a. meritocratic explanations which argue that "progress through school depends at least as much upon merit as upon class and whatever the effect of class it is not large by any reasonable statistical standard;" and

b. revisionist explanations which argue that "the progress of a student through school is strongly related to his social class." and, in fact, schools serve to perpetuate social inequalities from one generation to the next (Rehberg and Rosenthal, 1975, p. 3).

The work of Sewell and others cited earlier is indicative of meritocratic explanations. The revisionist position can be seen in the arguments of Sexton (1961), Katz (1971), Bowles and Gintis (1972), and Carnoy (1974).

Models of Self-fulfilling Prophesies in Classrooms

Merton (1957, p. 421) elevates the notion of self-fulfilling prophesies to the status of a social science theorem, the Thomas theorem: "If men define situations as real, they are real in their consequences." In its present application the theorem says that if teachers prophesy that students will

do well (or poorly) in school they will, in fact, do well (or poorly) as a result.

The conventional model adopted to explain self-fulfilling prophesies in the classroom is taken directly from Merton and has the following form. Expectations for the behaviors of others are an integral part of social interaction. The expectations that teachers develop for students' performances in school are influenced by two categories of student behaviors: those ascribed characteristics of students that vary across subpopulation groups and are, essentially, irrelevant to student performance (physical appearance, sex, skin color, clothing, dialect, mannerisms, and the like); and, the characteristics that students take on as a result of their achievements within the school, and which also vary across subpopulation groups (academic potential, academic performance, educational ambitions, program of study, behavioral conformity, and so on). These teacher prophesies condition the nature of teacher-student interaction such that an initially false definition of the situation may become true (the "reign of error", Merton, 1957, p. 423).

Within this general framework three somewhat different models of the self-fulfilling prophesy argument seem most likely, given the following assumptions:

a. that teacher expectations (T) do, in fact, affect student achievement (A);

b. that the ascribed characteristics of students (As) are causes of the achieved characteristics (Ac) that students take on in schools; and

c. that both Ac and As affect A other than via T, that is, not all effects of ascribed and achieved characteristics are via teacher expectations.

The three models in question are variants of the revisionist argument and are shown in Figure 1.

---

Figure 1 about here

---

Figure 1a is consistent with the extreme revisionist position. Teachers develop expectations for student performance on the basis of ascribed characteristics alone, these expectations affect the development of the achieved characteristics students take on within the school, and all three (As, Ac, and T) affect student performance. Two patterns of indirect effects are important to the revisionist argument: the indirect effect "b-c-d" which says, essentially, that the expectations teachers develop on the basis of ascribed student characteristics condition teacher-student

interaction which affects the development of students' capabilities and motivations and these, in turn, affect learning (see Rist, 1973); and, the indirect effect "b-f" whose meaning is that, other things equal, teachers' expectations still affect student achievement as a function of cognitive dissonance- and selective perception-like processes that distort teachers' perceptions of student performance (Brophy and Good, 1974, p. 36).

Figure 1b represents a less extreme position in that it argues for the development of teacher expectations as a function of both ascribed and achieved characteristics of students, such that initial expectations developed from ascribed characteristics could be modified in the light of subsequent achievements within the school. In other words, teachers still engage in socioeconomic discrimination but will modify initial false definitions of the situation given reason to do so.

Figure 1c is close to a meritocratic argument. Teachers are not affected by ascribed student characteristics, only by evidence of the student's abilities and motivations to learn. Nevertheless, in one sense the model is still a revisionist model because of the indirect effect "a-c-f": children from different socioeconomic groups come to school

initially displaying differences in academic capabilities. These serve as a bases for teacher expectations, and initial inequalities are reinforced via the effect "f", rather than eliminated via compensatory education.

By contrast, in the present context a strictly meritocratic model would postulate that "f"=0: teacher expectations do not affect student performance, which is determined principally by merit (effect "d"). Of course, even then one might make a revisionist argument on the basis that schools have failed to eliminate the indirect effect "a-d", and, hence, they still contribute to the inheritance of inequality through processes other than teacher prophesies. In fact, meritocratic arguments rarely assert that social origins has no effect; rather, they argue that the effect of merit is greater (Duncan, 1968, for example).

The empirical support for the relationships discussed is somewhat equivocal. Claims that teacher expectations effect a wide range of achievement related behaviors--IQ, achievement test scores, educational ambitions, self-concept, classroom behavior, and reading, among others--have not been supported consistently by the evidence (Rosenthal, 1974, p. 14), but have been supported nonetheless. Brophy and Good (1974) review this evidence in great detail and their earlier conclusion (Brophy and Good, 1972, p. 277) is a reasonable

evaluation of the evidence for this phenomenon: "The available data suggest that although expectation effects are quite real, they are neither ubiquitous nor particularly strong in the usual situation."

Empirical evidence in support of the other relationships within these models varies considerably. Although there are arguments to the contrary (Rist, 1973, for example), research into the nature of the status attainment process (Alexander and Eckland, 1973; Sewell and Hauser, 1975, for example) generally has not supported large teacher expectation effects on the achieved characteristics of students. This same work has, however, demonstrated sizeable effects of achieved characteristics (grades and IQ) on teacher expectations, along with relatively small effects due to SES (Sewell, 1971, p. 800). These data appear to offer more support to models like those shown in Figures 1b and 1c than to the extreme revisionist model of Figure 1c.

MODEL DEVELOPMENT

The model guiding this investigation stems from the preceding arguments and addresses four main issues:

a. the sources of teacher expectations in the ascribed and achieved characteristics of students;

b. the nature of teacher expectations themselves;

c. the influence of teacher expectations on two kinds of achievement evaluations made of students; and

d. the question of whether teacher prophesies mediate the influence of social origins on achievement and thus contribute to the maintenance of social inequalities across generations.

Sources of Teacher Expectations

The sources of teacher expectations within the model are those noted earlier: the ascribed characteristics of students, in this instance, father's occupation, father's education, mother's education, and the student's sex; and, the achieved characteristics students take on as a function of their role as students--IQ, past performance, program of study, and educational ambitions. With the exception of sex, the ascribed characteristics are treated as causes of achieved characteristics within the model, and all are assumed to be antecedents of teacher expectations and student achievement. The data are treated separately by sex on the assumption that interaction effects found elsewhere (Turner, 1964; Sewell, 1971; Alexander and Eckland, 1974) would

characterize these processes as well.

The ascribed characteristics are treated as exogenous variables within the model. Causal relationships postulated between these and the achieved characteristics, and among the achieved characteristics themselves, are common to models of status attainment, and are consistent with the time sequence of measurement (see Figure 2).

Teacher Expectations

Traditionally, teacher expectations are defined as expectations for the student's future performance on the behavior in question, in this case academic achievement. An extension of this notion is proposed here based on the following argument. Teachers face two basic tasks in day-to-day teaching: instruction, the inculcation of the knowledge, skills, attitudes, values, and beliefs that is their mandate; and, social control, "the mundane business of managing the movement of social traffic and of responding to violations of institutional expectations (Jackson and Lahaderne, 1967, p. 102). Similar notions have been advanced by Parsons (1959), Jackson (1968), Spady (1974), and Lortie (1975).

These two kinds of tasks are inseparable facets of the teaching process. Given this, it seems logical to expect that teachers will develop expectations for student

performance not only on the instructional dimension but on the social control dimension to classroom life as well. Moreover, the inseparability of these two aspects of teaching suggests that these two sets of expectations are developed simultaneously in teacher-student interaction, and with the one influencing the other. They are labelled here as cognitive expectations and normative expectations; respectively, expectations for student performance in academic (instruction) activities, and expectations for student adherence to the norms of classroom behavior. Brophy and Good (1974, p. 129) make somewhat similar arguments in their distinction between teachers' cognitive expectations and their affective attitudes.

As Figure 2 shows, both kinds of expectations are seen to stem from the same antecedents, with one exception: for reasons detailed later, program of study is assumed not to affect teachers' normative expectations. And, consistant with the notion of their inseparability, each set of expectations is seen as a cause of the other.

The point, of course, is that because the social control facet of classroom life is so important to teachers, their expectations for students' normative behaviors may affect substantially their cognitive expectations. Students

whose behaviors fit the expected model (that is, the middle-class model) benefit in terms of teachers' prophesies for their cognitive performance. On the other hand, the disjunction between the behaviors of working-class students and the middle-class norms of classrooms may affect teachers' cognitive expectations for these children adversely. Rist (1970, p. 441) develops an argument for a "vicious circle" along these lines and there is some evidence on this issue in Brophy and Good's review (Brophy and Good, 1974, pp. 129-160).

Apart from this indirect effect of ascribed characteristics on achievement via normative, and then cognitive expectations, the possibility of a more direct effect also exists. Teachers evaluations of student achievement may be affected directly by their normative expectations in the sense of being less sympathetic in the evaluation of students who give them a hard time in class (the "rejection" students in Brophy and Good's terms).

Student Achievement

For the most part, schools use two categories of achievement measures to evaluate student academic performance: standardized achievement tests; and, teacher assigned grades. Teacher expectancy research has emphasized the former type

of measure for good and obvious reasons; it has been concerned with teacher expectancy effects on what children actually learn. Yet this amounts to ignoring the achievement measures with the greatest impact on the student's status within the school, and those potentially most affected by teacher expectations. If teachers do, in fact, engage in class bias of the kind supposed by revisionist arguments, then this is likely to surface most strongly in the evaluations they themselves make of students. In other words, their expectations will affect both the learning itself, and the evaluation of this learning. Where standardized achievement tests are used teachers are unable to affect the evaluation of student learning, only the learning itself. In the case of teacher assigned grades teacher effects on both learning and evaluation are possible. To examine this issue, both standardized achievement measures and teacher assigned grades are included within the model as the ultimate dependent variables, with the prediction of greater teacher expectation effects on the latter measure of achievement.

Structure of the Model

The relationships discussed are shown in Figure 2. Most of the conventions of path analysis are adopted: variables are assumed caused by all others lying to the left

of them (the usual arrows are omitted for clarity) with one exception, the effect of track on normative expectations, which is assumed to be zero; the causal relationships among variables not separated horizontally are not examined unless otherwise indicated; curved double-headed arrows show causally unanalyzed relationships among exogenous variables; and, variance not accounted for by the model is attributed to disturbance terms designated i, j, a, b, c, and so on.

---

Figure 2 about here

---

## MODEL ESTIMATION

### Data

Data were obtained from the Carnegie Human Resources Data Bank, a five-year panel study of all students (some 90,000) who began high school in 1959 in the Canadian province of Ontario. The subjects for the present study are drawn from the more than 16,000 students attending schools in Toronto, the largest city. Of these, 10,530 (5,458 males and 5,072 females) completed the first two years of high school in minimum time. Repeated measures on these students and their teachers for the two years in question form the data base used to estimate the model.[2]

Variables

MacEachern (1960) and D'Oyley (1964) provide details on the measuring instruments used. Descriptions of the variables used here follow:

a. Social origins. Three student-report measures are used: father's occupation ($X_{16}$), an eight category scale based on Blishen (1967); father's education ($X_{15}$), a five point scale ranging from "no secondary school" to "university degree"; and, mother's education ($X_{14}$), measured in the same way.

b. Academic aptitude. This is treated as an unmeasured variable ($X_Q$) with three indicators: the CAAT I ($X_{13}$), a verbal reasoning test; the CAAT II ($X_{12}$), a mathematical reasoning test; and the CAAT III ($X_{10}$), a non-verbal reasoning test. The tests are described by D'Oyley (1964).

c. Track. Two main programs of study were available: a vocational program; and, a general program leading to a high school diploma ($X_8$).

d. Grades. Both measures are the student's grade point average, for the first ($X_{10}$) and second ($X_1$) years respectively, and were obtained from school records.

e. Ambition. The measure is a four point scale reflecting students educational and occupational plans in the following categories: leave school--for a job or trade training; complete school--job; complete school--non-university training; and complete school--university ($X_9$).

f. Cognitive expectations. Teachers within each school were asked to rate on a five point scale each student's chances of completing the fifth year of high school, the university entrance year. They were asked to meet as a group and give a single rating for each student which would represent their combined judgements and, furthermore, to rate students in both tracks on the same basis ($X_4$).

g. Normative expectations. The teachers were asked, in addition, to provide similar ratings on three dimensions of student classroom behavior: reliability ($X_7$), cooperation ($X_6$), and industry ($X_5$). These three ratings are taken as indicators of an unmeasured construct, normative expectations ($X_N$).[3]

h. Standardized achievement tests. Two tests are used: the CTGI, a test of general information ($X_3$); and, the CATE, an English language achievement test ($X_2$). The tests are described in D'Oyley (1964).

Estimation Procedures

Estimation of the model was undertaken in three stages. In the first of these, correlations of the unmeasured variables $X_Q$ and $X_N$ with the remaining variables in the model, and with each other, were estimated following Duncan et al. (1968).[4] The second stage involved the estimation of path coefficients and path regressions (Wright, 1960) by ordinary least squares and two-stage least squares procedures.[5] In the final stage, paths whose coefficients failed to exceed twice their standard errors were deleted, the model was re-estimated, and the

deviations of the implied correlations from their observed values were computed.

Results

The correlations among the measured and unmeasured variables and shown in Table 1, along with means and standard deviations, separately for males and females.[6]

---

Table 1 about here

---

The estimated path coefficients and path regressions are shown separately by sex in Tables 2 and 3 respectively. Deviations of the implied correlations from their observed values do not exceed .05 in any instance. In the estimation of path regressions, the mean of $X_Q$ was set to 100 and the standard deviation to 15, conventional values for IQ. The mean and standard deviation of $X_N$ (normative expectations) were set arbitrarily to the respective mean and standard deviation of $X_4$, cognitive expectations.

---

Tables 2 and 3 about here

---

## DISCUSSION

### Teacher Expectations.

The existence of teacher expectations for students' cognitive and normative performances is shown in Table 1 in the standard deviations of the measure of cognitive expectations ($X_4$) and the indicators of normative expectations ($X_5$, $X_6$, and $X_7$). Teachers have different expectations for different students, and higher expectations on the average for girls (sex differences in all four means are significant at conventional levels).

The data presented in Tables 2 and 3 support a mutual influence of these expectations upon each other. For both males and females, teachers' normative expectations (NE) have positive effects on teachers' cognitive expectations (CE), effects of .62 and .41 respectively. Better behaved students are seen as brighter students. However, the reverse effect of CE on NE differs between the sexes. Brighter boys are seen as less well behaved (-.24) while brighter girls are perceived better behaved (.14). Notions about sex differences in socialization may be appropriate. Faced with boredom in classrooms bright boys can be expected to misbehave, and bright girls not to.

### Self-fulfilling Prophesies.

Two issues are considered: the effect of teacher prophesies on learning where the evaluation of this learning

is not subject to teacher influence, that is, where standardized achievement measures are used; and, the effect of teacher prophesies on the evaluations teachers themselves make of students' learning.

To the extent that standardized achievement tests can be considered measures of learning, the data in Tables 2 and 3 show teacher expectations to have minor effects on student learning. In fact, the effects of teachers' CE do not reach statistical significance for girls, and are significant only for the English test for males. The effects of teachers' NE achieve statistical significance but are minor in comparison with the effects of other causes of achievement, notably IQ. One is left with the conclusion that teacher prophesies do not matter much where learning itself is concerned.

However, this does not hold true for teacher evaluations of student learning. Teacher prophesies appear to be self-fulfilling in the case of teacher assigned grades. The effects of both CE and NE are exceeded only by the effects from the student's past performance. Moreover, for males, CE and NE have approximately equal effects on teacher evaluations, and for females, the effect of NE is double that due to CE. Thus, it appears that teachers may adjust their evaluations of student performance to agree with their expectations for this performance and, furthermore, give equal or greater weight to

student conformity to the norms of classroom behavior in determining how well a student has learned what the school has to teach. Given the importance of grades for a student's status within the school, and for ultimate certification by the school, this finding assumes some importance. Teacher prophesies do not affect so much what is learned, but affect instead the certification of this learning within the school.[6]

Revisionist and Meritocratic Models.

There is no support in these data for revisionist arguments that attribute teacher expectations to the ascribed characteristics of students. In no instance do any of the three components of the student's social origins affect directly teacher expectations for either performance or behavior in the classroom. All effects of social origins on achievement are mediated by the achieved characteristics of students and, in this sense, the data support the type of model shown in Figure 1c.

The sources of teacher expectations, both CE and NE, lie in evidence of student merit; in past performance ($X_{10}$), current ambition ($X_9$), academic aptitude ($X_Q$), and the school's certification of this aptitude via ability grouping ($X_8$). Sex differences in the effects of these variables on CE and NE are negligible (Table 3).

SUMMARY

These data offer no support to revisionist arguments that see teacher prophesies as transmitting the effects of students' social origins to their academic achievements. If schools are implicated in the inheritance of inequality, then it is not because teachers engage in social class discrimination.

Nevertheless, teachers appear to engage in discrimination of another kind. Although their prophesies for both the cognitive and normative performances of students appear to have minor effects at best on what students actually learn, these same prophesies are fulfilled when teachers evaluate this learning. The data presented suggest that teachers bring their own evaluations of student performance into line with their expectations for this performance and, moreover, adjust these evaluations according to how well students conform to the behavioral norms of classrooms. Furthermore, conformity to these behavioral norms affects teachers' cognitive expectations such that "operators" among the students can do well within the classroom irrespective of what they actually learn. Notions of "systems awareness" (Tomlinson and TenHouten, 1973) may be appropriate. Whatever, given the

importance of school certification of learning for both educational and occupational attainments, this finding points to some decidedly unmeritocratic processes at work within schools.

Despite this, schools appear to be meritocratic in the sense defined previously. The social class/achievement relationship persists because of social class differences in "merit". And, although teachers prophesy, it does not seem to make much difference to what children learn. These prophesies do, however, make a difference to what teachers think children have learned. Students who pose no problems for teachers in either instruction or control receive overly favorable evaluations. Those who do pose problems for teachers in either or both of these task areas receive less favorable evaluations. Teachers are human, it seems.

FOOTNOTES

1. Perfect mobility is that state in which there is no inheritance of status: that is, "identical proportions of sons from all strata eventually will enter any given occupation" (Eckland, 1967, p. 189).
2. Of the 16,409 students who began high school in 1959 in grade 9, 633 left the schools in the first year, 1,499 remained in grade 9 in the second year, 513 left the schools in grade 10, 3,232 remain unaccounted for at the end of the second year of high school, and 10,530 completed the first two years of high school in minimum time. With the exception of those who were not promoted at the end of the first year, the missing individuals do not differ from the sample used here on ability or on measures of parental status attainments.
3. One could consider the relationship between this unmeasured variable and its indicators as either productive or reflective (Hauser, 1972). That is, one might argue that, although derived from teachers, these indicators are measures of student behavior and that it is these behaviors which cause the unmeasured normative expectations variable (compare Hauser's treatment of SES and its indicators). On the other hand, it seems that a reflective factor-analysis model may be appropriate too. One can argue that teacher's responses to these three questions about the normative behaviors of students are simply multiple reflections of a unitary underlying construct (normative expectations); that is, are caused by it, rather than cause it. The latter model is adopted here.
4. There is some question as to whether the parameter estimates produced by these somewhat arbitrary averaging procedures utilize the data most

efficiently (Hauser and Goldberger, 1971) and, as a result, no precise meaning is attached to these estimates; that is, small coefficients, and small differences between coefficients, are ignored.

5. To render the model just-identified and, hence, the estimates of parameters unique, it is necessary to assume that one potential cause of the teacher expectation variables has no effect. In this case, program of study was assumed not to influence teachers' normative expectations. This seems a reasonable assumption given that teachers were instructed to ignore track in evaluating students.

6. Clearly, other explanations of these findings are possible. This is non-experimental research with cause and effect argued for rather than "demonstrated." The effects interpreted as self-fulfilling prophesies may be simply a reflection of teachers' greater all around knowledge of students. That is, given knowledge of a student's IQ, track, past performance, social origins, and ambition, teacher evaluations add further pertinent information not covered by these variables. It is not entirely clear what this might be. However, this alternative explanation faces a major problem in the finding that teachers can predict teacher assigned grades but not standardized achievement test scores. Thus, for the alternative explanation to hold up one has to assume that standardized achievement tests do not measure what is taught in schools. This assumption appears tenuous in the extreme.

REFERENCES

Alexander, K. and B.K. Eckland. 1973. Effects of Education on the Social Mobility of High School Sophomores Fifteen Years Later (1955-1970). Final Report, Project No. 10202, Grant No. OEG-4-71-0037. Washington, D. C.: National Institute of Education, U.S. Department of Health, Education, and Welfare.

_____. 1974. "Sex Differences in Educational Attainment." American Sociological Review. 39 (October): 668-682.

Blau, P.M. and O.D. Duncan. 1967. The American Occupational Structure. New York: Wiley.

Blishen, B.R. 1967. "A Socioeconomic Index for Occupations in Canada." Canadian Review of Sociology and Anthropology. 4 (February): 41-43.

Bowles, S. and H. Gintis. 1973. "I.Q. in the U.S. Class Structure." Social Policy (November/December and January/February): 65-96.

Brophy, J.E. and T.L. Good. 1972. "Teacher Expectations: Beyond the Pygmalion Controversy." Phi Delta Kappan 54 (December): 276-278.

_____. 1974. Teacher-Student Relationships: Causes and Consequences. New York: Holt, Rinehart and Winston, Inc.

Carnoy, M. 1974. Education as Cultural Imperialism. New York: David McKay and Co.

D'Oyley, V.R. 1964. The Canadian Tests, Grades 8, 9, and 10. Carnegie Study Bulletin No. 5 Department of Educational Research. University of Toronto.

Duncan, O. D. 1968. "Ability and Achievement." Eugenics Quarterly 15 (March): 1-11.

Duncan, O.D., A.O. Haller and A. Portes. 1965. "Peer Influences on Aspirations: A Reinterpertation." American Journal of Sociology. 74 (September): 119-137.

Duncan, O.D., D.L. Featherman and B. Duncan. 1972. Socio-economic Background and Achievement. New York: Seminar Press.

Eckland, B.K. 1967. "Genetics and Sociology: A Reconsideration." American Sociological Review. 32 (April): 173-194.

Hauser, R.M. and A.S. Goldberger. 1971. "The Treatment of Unobservable Variables in Path Analysis." Pp. 81-117 in Sociological Methodology 1971, edited by H.L. Costner. San Francisco: Jossey-Bass, Inc.

Hauser, R.M. 1972. "Disaggregating a Social-Psychological Model of Educational Attainment." Social Science Research. 1 (June): 159-188.

Jackson, P.W. and H.M. Lahaderne. 1967. "Inequalities of Teacher-Pupil Contacts". Psychology in the Schools. 4: 204-211.

Jackson, P.W. 1968. Life in Classrooms. New York: Holt, Rinehart and Winston, Inc.

Katz, M. B. 1971. Class, Bureaucracy, and Schools. New York: Praeger.

Lortie, D.C. 1975. School-Teacher: A Sociological Study. Chicago: The University of Chicago Press.

MacEachern, D.G. 1960. Twenty questions, Carnegie Study Bulletin No. 1. Department of Educational Research. University of Toronto.

Merton, R.K. 1957. Social Theory and Social Structure. New York: The Free Press.

Parsons, T. 1959. "The School Class as a Social System: Some of its Functions in American Society." Harvard Educational Review. 29: 297-318.

Rehberg, R.A. and E. Rosenthal. 1975. "Social Class and Merit in the High School: A Multi-Study Analysis." Research Paper No. 27 Center for Comparative Political Research. SUNY at Binghamton.

Rist, R.C. 1970. "Student Social Class and Teacher Expectations: The Self-Fulfilling Prophesy in Ghetto Education." Harvard Educational Review. 40 (August): 411-451.

_____. 1973. The Urban School: A Factory for Failure. Cambridge, Mass.: MIT Press.

Rosenthal R. and L. Jacobson. 1968. Pygmalion in the Classroom. New York: Holt, Rinehart and Winston, Inc.

Rosenthal, R. 1974. On the Social Psychology of the Self-Fulfilling Prophesy: Further Evidence for Pygmalion Effects and Their Mediating Mechanisms. New York: MSS Modular Publications.

Sewell, W.H. 1971. "Inequality of Opportunity for Higher Education." American Sociological Review. 36 (October): 793-809.

Sewell, W.H. and R.M. Hauser. 1975. Education, Occupation, and Earnings: Achievement in Early Career. New York: Academic Press.

Sexton, P.C. 1961. Education and Income. New York: Viking Press.

Spady, W.G. 1974. "The Authority System of the School and Student Unrest: A Theoretical Exploration." Pp. 36-77 in Uses of Sociology of Education. Seventy-third yearbook of NSSE. Chicago: The University of Chicago Press.

Tomlinson, T.M. and D. TenHouten. 1973. "System Awareness, Exploitive Potential and Ascribed Status of Elites." Mimeo, National Institute of Education.

Turner, R. 1964. "Some Aspects of Women's Ambition." American Journal of Sociology. 70 (November): 271-285.

Wright, S. 1960. "Path Coefficients and Path Regressions: Alternative or Complementary Concepts?" Biometrics. 16 (June): 189-202.